

ABSTRACT

Disclosed is a passive optical network of code division multiple access using error correction code, which includes a plurality of optical networks units (ONU) and a central office, assigns a pseudo-noise (PN) code to each ONU, and transfers optical signals modulated by the PN code between the central office and each ONU, the passive optical network comprising the ONU which inserts error correction codes into upstream signals, transmits the upstream signals to the central office, and controls frequencies of the upstream signals using a response of the central office for the transmitted error correction codes and the central office which receives the upstream signals code division-encoded, decodes the upstream signals, inserts error counts of the error correction code included the upstream signals into downstream signals for the ONU, and transmits the downstream signals to the ONU.